| Work Order March-12-13 1:56 | | 474 | | *98474* | | | | | | | | | Page 1 |
|--------------------------------|--|---|-----------------|----------------------|-----|-------------|------------|--------------|---------------|-------------|-------|------------------|----------------|
| Item ID: D Revision ID: |)2935 | | | Accept | * | 1900 | 040 | 100 |) * | Setup | Start | *N | S1* |
| | addle Spacer | | • | | | | | | | | Stop | *N. | S2* |
| Start Date: 3/ | /11/13 | Start Qty: 20.00 | *20* | | | Cust Item I | D: | | | | | | |
| Required Date: 3/ | /22/13 | Req'd Qty: 20.00 | *20* | | | Customer: | | | • | | | | |
| Reference: | | | | | | | | _ | . • | D | Stant | | |
| Approvals: | Process Pla | in: <u>MLJ</u> | Date: 13-03-13 | Tooling: | | D: | ate: | | ļ | Run | Start | *N | R1* |
| (| QC: | | Date: | SPC (Y/N): | | D: | ate: | | | | Stop | *N | R2* |
| Sequence ID/ Work Center ID | and consider the constant of t | Operation Description | | Set Up/ Run Hours | | Tool ID | Tool # | Plan Code | Accept Qty | Rejo Qty | | Reject Number | Insp. Stamp |
| Draw Nbr | Rev | ision Nbr | | | | | | | | | | | |
| D2935 | Rev | В | | | | | | | | | | | |
| 100 | | | | 0.00 | | | | | _ | | | | DAS |
| *100* | | FLOW WATER JET | | | | | | | 26 | | | | 05 13.04 |
| Waterjet | | Memo | D D2025 | 0.00 | | | | | 19 | | | | 0-83 |
| FLOW CNC Waterjet | | 1-Cut as per Dwg Rev: Prog Rev: 2-Deburr if r | <u>B</u> | | | | | | | | | | |
| 110 | | QC2- Inspect parts off ma | achine FAI/FAIB | 0.00 | | | | | | | | | DAG |
| *110* | | • | | | | | | • | 26 | | | , | 05/BOY |
| QC . | | Memo | | 0.00 | | | | | 19 | | | | |
| Quality Control | | | | 1 to 1 | , : | | | | | | • | | |
| 120 | | QC8- Inspect parts - seco | nd check | 0.00 | . (| ~~3 | | | | | | | • |
| *120* | | | | SV | ns | 31 | | | 2 | | | | |
| QC Quality Control | | Memo | | 0.00 13 6 | 19 | ** | | | 19 | | | | |

| | | | | | | | | | DQA: | Date | · | | | |
|--------------|------------|-------------|------------|--------|----------------------------|----------------|----------------------------|-----------|---------------|---------------|--------------------|--|--|--|
| NCR: Y | es / No | | | | WORK ORDER NON- | CONFO | RMANCE / UP | DATE | | | | | | |
| | | | | | | | | | QA Closed: | Date | | | | |
| Work Orde | ř: | | | | DISPOSITION | | AGAINST DEPARTMENT/PROCESS | | | | | | | |
| | | | | | Rework | 7 | Skid-tube | Crosstube | 1 | Water Jet | Engineering | | | |
| Part N | o | | | | Scrap |] | Machining | Small Fab | } | d. Eng. Coor. | Quality _ | | | |
| | | | | | Use-as-is | The | ermoforming | Finishing | Rec/Sto | e/Packaging | Other | | | |
| NCR N | 0 | | | | Work Order Update |] | Large Fab | Composite | Supplier |] [] | | | | |
| Root | <u> </u> | 1 | | Descri | ption of work order update | Initia | Ac | tion | Sign & | | <u> </u> | | | |
| Cause | Date | Step | Qty | | or Non-conformance | Chief E | | ription | Date | Verification | QC Inspector | | | |
| oc/Data | | | | | | | | | | | | | | |
| quip/Tooling | | | | | | | | | | | | | | |
| perator | | | | | | | | | | | | | | |
| /laterial | | | | | | | | | | | | | | |
| etup | | | | | • | | | | : | | | | | |
| Other | | | | • | | | | | | | | | | |
| rocess | | | | | | | | | | | | | | |
| upplier 💐 | · | | | | | | | | | | | | | |
| raining | | | | | | | | | | | | | | |
| Inapproved | | | | | | | | | | | | | | |
| | | | | | F | AULT CA | TEGORY | | | | | | | |
| Landin | g Gear | | | | General | ` | - | | - | | _ | | | |
| | Bending | | | | Bend | Grai | n | | Ovalized | | Pressure/Forced | | | |
| | Centre N | ot Concei | ntric to (| o/s | _BOM/Route | Hard | ware | | Over/Under | tolerance | Temperature/Cure _ | | | |
| | Cracks | | | | Broken/Damaged | Insp | ection Incomplete | <u>L</u> | Part Incorred | zť L | Weld . | | | |
| [| Crushed/ | 'Crimped | | | Burrs | Instr | uctions Incomplete/ | Unclear | Part Lost/Mi | ssing | Wrong Stock Pulled | | | |
| | Cuffs | | | | Contamination | Mai | ntenance | | Part Moved | | • | | | |
| | Heat Tre | at | | | Countersink | Misl | abeled | | Positioned V | Vrong | _ | | | |
| | Inspection | n Strip in | Tube | | Cut Too Short | Misr | ead | | Power Loss/ | Surge · | Other | | | |
| | Ripples in | n Bend | | | Drill Holes | Offs | et | | | | | | | |
| [| Torque V | Vaves in E | Extrusio | n [| Drawing | Out | of Calibration | | | | | | | |
| [| Turning S | Sequence | | | Finish | Out | of Sequence | | | | | | | |
| | Wave/Tv | vist in Tul | эе | | Folio | Outs | ide Dimensions | | | _ | | | | |

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Quality Control

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Identify as per dwg & Stock Location: 57 6 0.00

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Packaging

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|---------------|--------|-------------|----------|----------|---------------|---------------------------------------|-----|----------|-------------------|---------------------|---------------|---------------|--------------------|
| NCR: | res / | No | | | | WORK ORDER NON-C | 0 | VFORM | MANCE / UPI | DATE | | | |
| | | | | | | | | | | | QA Closed: | Date | 2: |
| Work Orde | or. | | | | | DISPOSITION | | | | AGAINST DE | PARTMENT | /PROCESS | |
| Work Orac | | | | | | Rework | 1 | | Skid-tube | Crosstube | 1 | Water Jet | Engineering |
| Part N | ۱o. | | | | | Scrap | | | Machining | Small Fab | Pro | d. Eng. Coor. | Quality |
| | | | | | | Use-as-is Thermoforming Finishing | | | ~ — | Rec/Sto | re/Packaging | Other | |
| NCR N | No | | | | - | Work Order Update Large Fab Composite | | | Composite | e Supplier Supplier | | | |
| Root | | | | | Descri | ption of work order update | | Initial | Act | tion | Sign & | | |
| Cause | | Date | Step | Qty | (| or Non-conformance | Ch | ief Eng | Descr | ription | Date | Verification | QC Inspector |
| Doc/Data | | | | ! | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | | | |
| Operator | | | | · | | | | | | | | | |
| Material | | | | | | | | | | | | | |
| Setup | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | |
| Process | | | | | | | | | | | | | |
| Supplier | | | | | | | | | | | | | |
| Training | | | | | | | | | | | | | |
| Unapproved | П. | | | | | | | | | | | | |
| | _ | | | | | F | AUI | T CATE | GORY | | | | |
| Landi | ng Gea | ır | | | | General | | ٠, | | _ | - | _ | |
| | Ве | ending | | | | Bend | | Grain | | | Ovalized | | Pressure/Forced |
| | C€ | ntre No | t Concer | ntric to | o/s | BOM/Route | | Hardwa | re | | Over/Under | tolerance | Temperature/Cure |
| | Cr | acks | | | | Broken/Damaged | | Inspecti | on Incomplete | | Part Incorred | it _ | Weld |
| | Cr | ushed/0 | Crimped | | | Burrs | | Instruct | ions Incomplete/l | Jnclear | Part Lost/Mi | ssing | Wrong Stock Pulled |
| | Cu | ıffs | | | | Contamination | | Mainte | nance | | Part Moved | | |
| | Пне | eat Trea | t | | | Countersink | | Mislabe | led | | Positioned V | Vrong _ | _ |
| | In: | spection | Strip in | Tube | | Cut Too Short | | Misread | I | | Power Loss/ | Surge | Other |
| | Ri | pples in | Bend | | | Drill Holes | | Offset | | _ | | | |

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

| Work Orde March-12-13 1: | | 174 · | | *984 | 174* | | | | | | Page 3 |
|--|---------------------|---|--------------------|------------------------------|---------------------------|------------|--------------|------------|-------------|---------------|------------------------------|
| Item ID: Revision ID: Item Name: | D2935 Saddle Spacer | | | Accept | *N900 | 040 | 100 |)* s | etup | Start Stop | *NS1* *NS2* |
| Start Date: Required Date: Reference: | 3/11/13 | Start Qty: 20.00 Req'd Qty: 20.00 | *20* *20* | | Cust Item II Customer: | D: | | | | | INIJ |
| Approvals: | Process Pla QC: | n: | Date: | Tooling: _ SPC (Y/N): | Da | te: te: | | F. | lun | Start Stop | *NR1* *NR2* |
| Sequence ID/ Work Center II 160 *160* QC Quality Control | D | Operation Description QC21- Final Inspection - Memo | Work Order Release | Set Up/ Run Hours 0.00 | Tool ID | Tool # | Plan Code | Accept Qty | Rejo Qty | 13/ | Reject Insp. Number Stamp |

| | | | | | | | | | DQA: | Date: | |
|---|--------------------------|----------|------|--------|--|-----------|-------------------------------------|---|--|---|--|
| NCR: Y | es / No | | | | WORK ORDER NON-C | ONFORI | MANCE / UP | DATE | QA Closed: | Date: | : |
| Work Orde | | | | | DISPOSITION | | | AGAINST DE | | | |
| | 0 | | | | Scrap Machining Small Fa Use-as-is Thermoforming Finishin | | | Crosstube Small Fab Finishing Composite | 1 | Water Jet d. Eng. Coor. re/Packaging Supplier | Engineering Quality Other |
| Root | | | | Descri | ption of work order update | Initial | · Ac | tion | Sign & | | |
| Cause | Date | Step | Qty | (| or Non-conformance | Chief Eng | Desc | ription | Date | Verification | QC Inspector |
| Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved | | | | | | | | | | | |
| | | . | | | F | AULT CATE | GORY | | | | |
| Landin | Bending Centre No | | | o/s | General Bend BOM/Route Broken/Damaged | — | ion Incomplete | Undoor | Ovalized Over/Under Part Incorre Part Lost/Mi | ct | Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled |
| | Crushed/ Cuffs Heat Trea | · | | | Burrs Contamination Countersink | | tions Incomplete/ enance eled | Unclear | Part Moved Positioned V | Vrong | |
| | Inspectio | - | Tube | | Cut Too Short | Misrea | d | | Power Loss/ | Surge | Other |
| | Ripples in | Bend | | | Drill Holes | Offset | | | | | <u></u> |

Out of Calibration
Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish Folio

Picklist Print

March-12-13 1:56:48 PM

Work Order ID:

98474

Parent Item:

D2935

Parent Item Name:

Saddle Spacer

Start Date: 3/11/13

Required Date: 3/22/13

Start Qty: 20.00

Required Qty: 20.00

Comments:

IPP A00.06.06New IssueEC

IPP Rev:B Now 6061-T6 06-06-23 JLM

| | IFF NEV.D NOW | 3001-10 00-00-2 | 2 JUNI | | | | | | | | | | |
|------------------------------------|------------------------|-----------------|-------------|--|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
| M6061T6S.080 6061-T6 .080 Sheet | | Purchased | No | and the second s | | 100 | sf | 303.0000 | 0.0507 | 1.067368 | - M | 13.09 | 1.07 |
| | | | | Location | | Loc Oty | <u>Lo</u> | c Code | | | | | |
| | | | | MAT021 | | 303.000032 | | | | | | | |
| | | | | 11728 | 35 | 0.497264 | | | | | | | |
| | | | | 12457 | 72 | 0.502768 | | | | | | | |
| | | | | 12478 | 36 | 302 | | | | | | | |

Page 1

| | | | | DQA:_ | Date: | |
|------|-------|----|-------------------------------------|-------|-------|--|
| NCR: | Yes / | No | WORK ORDER NON-CONFORMANCE / UPDATE | | | |

| | | | | | | | | | QA Closed: | Date | e: | | |
|---------------|---------|---------------|----------|---------|--|-----------|--|---|--------------|--------------|--------------------|--|--|
| Work Orde | or. | | | | DISPOSITION | | | AGAINST DE | PARTMENT | /PROCESS | | | |
| Part N | lo | | | | Rework Scrap Use-as-is Work Order Update | - I | Skid-tube Machining moforming Large Fab | ing Small Fab Prod. Eng. Coor. Quality ing Finishing Rec/Store/Packaging Other Supplier | | | | | |
| Root | | | | Descr | ription of work order update | Initial | Ac | ction | Sign & | | | | |
| Cause | Date | Step | Qty | | or Non-conformance | Chief Eng | Desc | cription | Date | Verification | QC Inspector | | |
| Doc/Data | | | | | | | | | | | | | |
| Equip/Tooling | | 1 | ļ i | | | ł | | | | | | | |
| Operator | | | | | | | | İ | | | | | |
| Material | | | • | | | | - | | | | | | |
| Setup | | | | | | l | | | | | | | |
| Other | | ļ | | | | | | ! | | | | | |
| Process | | | | į | | | | | | | | | |
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| Training | | | | | • | | | | | | | | |
| Unapproved | | | | | | | | | | | | | |
| | | | | | F | AULT CATE | GORY | | | | | | |
| Landii | ng Gear | | | | General | | | _ | 5 | | | | |
| , | Bendir | g | | | Bend | Grain | | | Ovalized | <u> </u> | Pressure/Forced | | |
| | Centre | Not Conce | ntric to | o/s | BOM/Route | Hardwa | are | | Over/Under | - | Temperature/Cure | | |
| | Cracks | | | L | Broken/Damaged | — | ion Incomplete | <u> </u> | Part Incorre | | Weld | | |
| | Crushe | d/Crimped | | L | Burrs | | tions Incomplete/ | 'Unclear | Part Lost/Mi | issing | Wrong Stock Pulled | | |
| | Cuffs | | | · | Contamination | — | enance | | Part Moved | | | | |
| | Heat T | reat | | L | Countersink | Mislab | eled | <u> </u> | Positioned V | | | | |
| | Inspec | tion Strip ir | Tube | | Cut Too Short | Misrea | d | | Power Loss/ | Surge | Other | | |
| | Ripple | s in Bend | | L | Drill Holes | Offset | | | | | | | |
| | Torque | Waves in | Extrusio | n [| Drawing | Out of | Calibration | | | <u>.</u> | | | |
| | Turnin | g Sequence | : | | Finish | Out of | Sequence | | | | | | |
| | l Wave | Twist in Tu | be | | Folio | Outside | e Dimensions | | | | | | |

| DART AEROSPACE LTD | Work Order: | 98474 |
|------------------------------|--------------|-------------|
| Description: Saddle Spacer | Part Number: | D2935 |
| Inspection Dwg: D2935 Rev: B | | Page 1 of 1 |

FIRST ARTICLE INSPECTION CHECKLIST

| X | First Article | | Prototype |
|---|---------------|--|-----------|
|---|---------------|--|-----------|

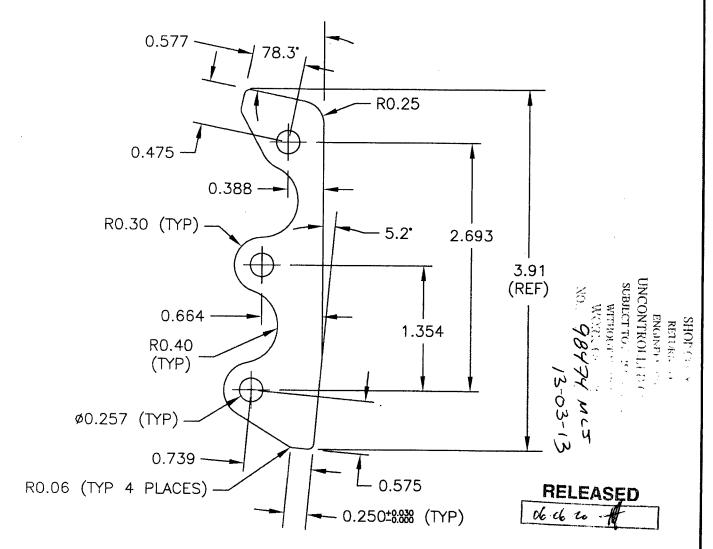
| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|----------------------|---------------|---------------------|--------|--------|-------------------------|----------|
| Ø0.257 | +0.006/-0.001 | 0.258 | | | V | JKM-01 |
| 3.91 | +/-0.030 | 3.91 | V | | Ż | |
| 1.354 | +/-0.010 | 1.358 | V | | V | |
| 2.693 | +/-0.010 | 2.703 | 1 | | V | |
| 0.250 | +/-0.010 | 0.250 | V | | V | |
| R0.25 | +/-0.030 | RO.25 | V | | RG | |
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| Measured by: | Mnl | Audited by: | SMA | Prototype Approval: | N/A |
|--------------|----------|-------------|-------|---------------------|-----|
| Date: | 13.04.07 | Date: | 13-49 | Date: | N/A |

| A 06.06.05 New Issue | roved | App | <i>,</i> \sqcap | Revised by | Change | Date | Rev |
|-------------------------------------|-------|----------------|-------------------|------------|------------------|----------|-----|
| B 06 06 23 Dwg Rev changed K.V.II M | 1 | | | KJ/JLM | New Issue | 06.06.05 | Α |
| TRO/OEIVI CAST | 7/1 | \overline{C} | 4 | KJ/JLM | Dwg Rev. changed | 06.06.23 | В |



| DESIG | . T. | DRAWN BY | DART AEROSPACE PORT HADLOCK, V | |
|-------|-------|-------------|-----------------------------------|--------------|
| CHEC | | APPROVED ,, | DRAWING NO. | REV. B |
| | PH | - At | D2935 | SHEET 1 OF 1 |
| DATE | | | TITLE | SCALE |
| 06.0 | 05.29 | | SADDLE SPACER | 1:1 |
| Α | | 99.11.02 | NEW ISSUE | |
| В | | 06.05.29 | ADD 6061-T6 MATERIAL | |



NOTES:

1) MATERIAL:

6061-T6 (PER QQ-A-250/11 OR AMS 4025 OR AMS 4027) 0.080" THICK

(REF DART SPEC M6061T6S.080)

OR

5052-H32/H34 (PER QQ-A-250/8 OR AMS 4016) 0.080" THICK

(REF DART SPEC M5052H32S.080)

- 2) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) BREAK ALL SHARP EDGES 0.010 TO 0.020
- 5) ALL DIMENSIONS ARE IN INCHES

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